

Ceemac

by John Molloy and Colin Holgate

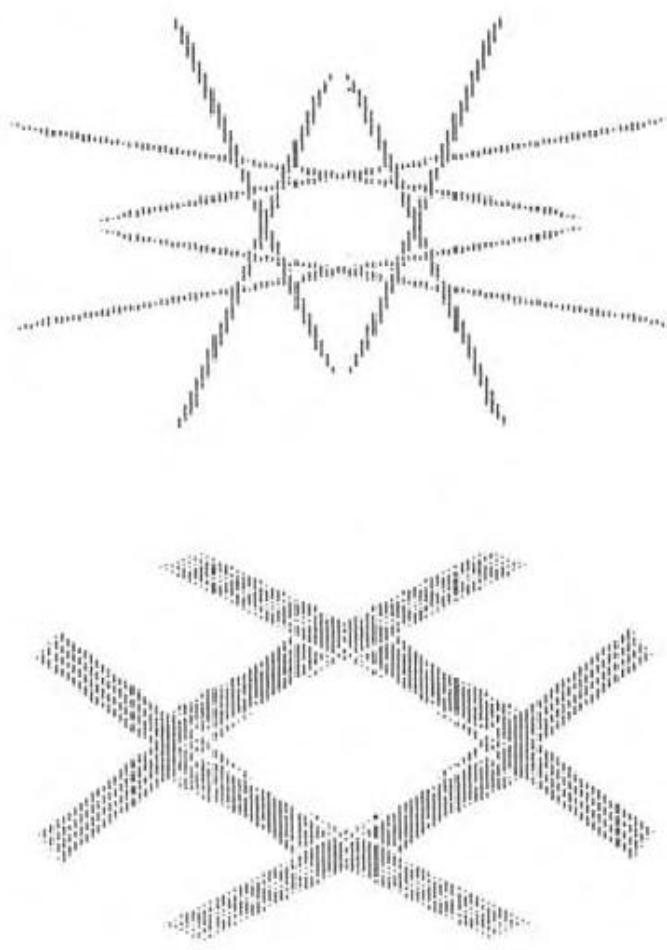
Ceemac is an abstract graphics language created by an American called Brooke Boering. It looks a little like Pascal when written down, and it has two major sections: the editor and the interpreter. All the variables are predefined and are prenamed. Some for example, read the keyboard or give the state of the paddles or the state of the cassette input port, others are for tables and giving random numbers over specific ranges. It also has a library of almost 30 macros which includes a trace function and the ability to send sound out through the speaker.

Mr Boering's concepts are simple to follow but Ceemac does have some strange eccentricities. For example instead of writing a program you compose a score regarding the graphic displays as visual scores and not as programs. However if you also ignore the fact that everything else connected with the disk has a name (edgar the editor and cindy the proofreader etc). It is surprisingly easy to write impressive abstract graphics.

All the scores from the Fire Organ demonstration disk are supplied with the language in editing form and this gives the best start to writing your own routines, the suggestion being to start with something which is "sorta close" to what you would like to see on the screen and then experiment until you a) get what you want or b) (the more likely) end up with something very impressive but not what you were aiming at in the first place.

When the disk is first booted, it comes up with the Fire Organ logo. Then the program jumps into the fire-organ routine. In fact it looks the same as Fire Organ except that none of the keys apart from the two arrow controls seem to work. By pressing **ctrl-A** the screen jumps to text and it is in editing mode. The current score is the fire-organ score. To execute it again enter **ctrl-A** this is how to move between the editor and the interpreter. Once in the editor **ctrl-C** jumps Ceemac into DOS and to run another score you simply **brun** it. To re-enter Ceemac if you jump out accidentally then just type ***800G**.

Each score is limited to 256 statements. These include title, end statement and any comments. You can only put one statement on a line. For example one of the scores which comes with the disk is called **ko** (Standing for key O on the Fire Organ disk).



SCORE: **ko**-21ST CENTURY MAN (SLOW)

```

:
: INITIALIZE
:
SPEED [0;0]
CLEAR [0;0]
V2 = 1
: V2 = INCR. FOR Y CORDINATES
:
V3 = 2
: V3 = INCR. FOR X CORDINATES
:
V4 = 7
: V4 = SEMMITRY
:

```

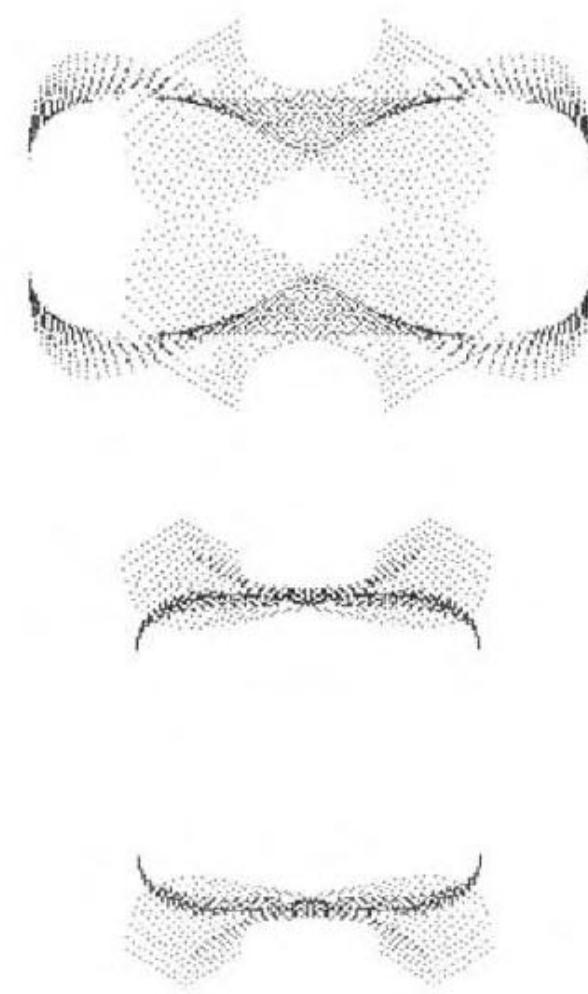
```

: MAIN CHAIN
0
:
: INIT. FOR NEW PATTERN
SKY [$OF;0]
XY2 = RANDOM;$80
COLOR = NXTCOL
      SET COLOR FOR NEW PATTERN
:
: DRAW PATTERN ERASE AFTER 8 LINES
FOR $10
  BLINE {0;V4}
  Y2 = Y2 + V2
  X2 = X2 + V3
  Y1 = Y1 + V2
  X1 = X1 + V3
  BRASE {8;0}
AGAIN
CEEMAC REL 1.0

```

From its listing; the top line is the title line; the colon is the comment symbol. SPEED {0;0} is the macro which overrides the paddle setting. CLEAR {0,0} sets the screen to black. V# are the free variables and can be set as required. 0 in the line under the comment : MAIN CHAIN is where the program loops back to when the left arrow is pressed. All ceemac programs loop back on themselves so that when it hits the last statement (CEEMAC REL 1.0) it jumps back to the top of the score. SKY {0F;0} fills the screen with stars but due to the \$OF in the first parameter it fills the screen with 15 stars. XY2 = RANDOM;\$80 is the same as typing X2 = RANDOM Y2 = \$80 and is the end position for the BLINE macro below. RANDOM is a random variable between 0-\$FF. COLOR=NXTCOL gets the next colour off of the hires colour table. COLOR is the variable which holds the present plotting colour. FOR \$10 is the start of a loop which ends at the AGAIN. It is in hex. BLINE {0;V4} draws a straight line XY1 holding the start position XY2 holding the end and COLOR holding the colour of the line. The parameter set to V4 in the macro is the symmetry (if it was set to 0 it would draw a single line but V4 is set to 7 which reflects in all eight sectors of the screen. Y2 and Y1 are incremented by V2 which is set to 1 while X2 and X1 are incremented by V3 which is set to 2. BRASE {8;0} erases the BLINE plotted eight generations later (so after it has plotted the eighth line it erases the first, after the ninth the second etc.). After this loop has been executed sixteen times the computer jumps to the top of the score.

After a short while I found it quite easy to understand what was going on and to write simple but effective graphic displays. Spline runner was one of my early attempts to write a Ceemac score, along with it I have included some graphics dumps of the routines.



SCORE: SPLINE RUNNER

```

:
: AUTHOR JOHN MOLLOY
:
: A CEEMAC SCORE ILLUSTRATING
: THE USE OF THE JORDAN CURVE
: KNOWN TO CEEMAC AS SPLINES
:
: IF I CAN DO IT ANYONE CAN
:
: SELECT THE FASTEST SPEED
: THIS IGNORES THE PADDLES
: SPEED {0;0}
:

```

```

: NOW CLEAR THE SCREEN BLACK
CLEAR [0;0]

:
: SET WHITE AS THE COLOUR FOR
: PLOTTING
COLOR = $FF

:
: SELECT TO RANDOM START POSITION
: BETWEEN 0-127
XY1 = RND7;RND7
XY2 = RND7;RND7

:
:
: THIS IS WHERE TO LOOP BACK TO
F

:
: GIVE A RANDOM FIGURE WITH WHICH
: TO WEIGHT THE SPLINE
: IE THE AMOUNT OF BENDING APPLIED
: TO THE SPLINE
XY0 = RND7;RND7
XY3 = RND7;RND7

:
: ADD OR SUBTRACT UNTIL THE SPLINE
: HITS A WALL
X1 = X1 % 2
Y1 = Y1 % 2

:
: NOW WE GET TO DRAW THE SPLINE
SPLINE [8;6]
:
: ^ ^
: I I
: I VALUE OF SYMETRY
: MAXIMUM FORCE ON SPLINE
:
: ERASE THE 20TH LEVEL SPLINE
SPRASE [$14;0]
:
: LOOP BACK ROUND TO F
CEEMAC REL 1.0

```

As you can see it is quite varied even from a program as short as this (12 lines if you take out all the comments. A SPLINE is a curved line (as opposed to a BLINE which is a straight line) and the mathematical formula for this macro was supplied by Mik Jordan (hence the other reference to them as Jordan's curves) The manual gives a two and a half page explanation of how they work as the concept is quite hard to grasp but the effect is stunning. The graphics dumps don't give any impression of movement which is how the scores 'evolve' in real time.

On the whole Ceemac is an interesting graphics package. If you are into fast moving hi-resolution abstract visuals, then it is not to be missed. Anything omitted

from the manual is covered in notes left in BRUN-able files on the disk, and are easy to access. But if you would just like to see what Ceemac can do then the package Fire Organ is for you.

Fire Organ

No amount of describing Ceemac can really show what it can do for you, as per the formula '1 picture = 1000 words'. Fortunately the makers of Ceemac have put together a 'visual album' of Ceemac 'scores'. This analogy to music is a good way of putting things. The 'Fire Organ' disk (available from the software library) is a collection of visual 'tracks' created on Ceemac and put together with another program called Maestro. By combining many scores together a variety of effects can be triggered without having to load in another effect file. This is done by assigning a separate key for each score. Altogether there are 34 different Ceemac files, operated by hitting the keys 1 to 9 and A to Y.

In general the different effects are either moving lines, spline dot lines, kaleidescope patterns or actual shapes. Many of the parameters can be altered during these routines, for example the rate at which the lines are drawn/erased can be adjusted by moving paddle 0, or the next lap of the effect can be triggered by pressing button 0. Also paddle 1 may affect how many lines appear at once, and button 1 changes direction or colour of the lines. This depends on which of the 34 scores you are watching. In any case the left arrow duplicates the role of button 0, and the right arrow does the same for button 1. By pressing, hitting or moving these controls you have dynamic control over the score as it is being shown. Effectively this means you 'play' the score. This can be very impressive if the playing is done to music, at least we hope it's impressive, Mainframe has used Fire Organ extensively over the past 10 concerts!

The Ceemac scores on the Fire Organ disk were written to be accompanied with music. Apart from the main display program, the disk also has several binary files on it labelled 'About...'. These are to give the user an insight into the thinking behind

Ceemac and the scores themselves. When run these files display a text account of what inspired the writing of the different scores. This seems to vary from a favourite piece of rock music (Mainframe probably), to having a drink with a girl friend! Some of the text is of no particular value, but is part of a friendly approach that Ceemac has throughout. This is a bit hard to explain. Put simply, Ceemac is written in a familiar way, the sort of program you would write for your own use. Things are often explained in an amusing way. We have heard criticism of this from someone whose sense of humour is on a different wavelength to Brooke Boering and his friends, but we get on well with the friendly method used.

Other files explain the different parts of Ceemac, such as the program editor, the text editor and other Vagabond products.

Altogether then, Fire Organ would be worth buying as a separate product, just to watch while listening to music. As it is Fire Organ is effectively free, to help sell the Ceemac language itself. Ceemac doesn't appear to be available in Britain, but can be bought in America. Maestro is also available from Vagabond. Further details are given in the afore mentioned binary files on Fire Organ.

hardcore

Contributions to Hardcore are always welcomed. Without them it would not exist. Whether you have a learned article, a 'quick tip', a problem or a solution, let us know.

If you have more than a short letter, it is helpful if you could send it on a disk, with a hard copy if possible. If you want to send printed copy, please do not cut it up but fill justify on a 9 cm (3.5 ins) column. We prefer copy on disk, either as a text file or an Applewriter I file.

Pascal text files and others such as Wordstar files can probably be accommodated. Please use the minimum of embedded printer commands.

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